

AGU Abstract for Fall 2000 meeting

Stratospheric sulfuric acid aerosols: Composition and temperature discrimination with the ATMOS data set.

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A method has been developed to extract the aerosol signature from high spectral resolution infrared transmission spectra (Eldering et al, 1998; 2000). Data collected with the ATMOS instrument in 1991 and 1992 show strong signatures of sulfuric acid aerosols. Rinsland et al (1994) also investigated this topic for a small set of the ATMOS observations, and noted the disagreement between the observations and SSA models using the optical constants of Remsberg (1974) and Palmer and Williams (1975).

Recently, low temperature, composition dependent optical constants have been published (Niedzela 1998; Tisdale 1998; Biermann 2000). An investigation of the quality of fit between the ATMOS measurements and the various sets of optical constants was conducted. The ability to distinguish composition and the importance of temperature dependence is a function of the measurement error and variability of the optical constants. Details of the filter dependent results will be presented.

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